

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/534,774
Source: PGT/10
Date Processed by STIC: 5/20/05

ENTERED



PCT

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/534,774

DATE: 05/20/2005
TIME: 13:31:46

Input Set : A:\seqlist.txt
Output Set: N:\CRF4\05202005\J534774.raw

```

4 <110> APPLICANT: BRETT, Sara
5      HAMBLIN, Paul A.
6      OGILVIE, Louise
8 <120> TITLE OF INVENTION: Vaccine
11 <130> FILE REFERENCE: VB60547
C--> 13 <140> CURRENT APPLICATION NUMBER: US/10/534,774
14 <141> CURRENT FILING DATE: 2005-05-13
16 <150> PRIOR APPLICATION NUMBER: PCT/EP03/12793
17 <151> PRIOR FILING DATE: 2003-11-13
19 <150> PRIOR APPLICATION NUMBER: GB 0226422.7
20 <151> PRIOR FILING DATE: 2002-11-15
22 <160> NUMBER OF SEQ ID NOS: 24
24 <170> SOFTWARE: FastSEQ for Windows Version 4.0
26 <210> SEQ ID NO: 1
27 <211> LENGTH: 60
28 <212> TYPE: DNA
29 <213> ORGANISM: Hepatitis C virus
31 <400> SEQUENCE: 1
32 gaattcgcgg cgcgcatgag caccaacccc aagccccagc gcaagaccaa gcggAACACC 60
35 <210> SEQ ID NO: 2
36 <211> LENGTH: 59
37 <212> TYPE: DNA
38 <213> ORGANISM: Hepatitis C virus
40 <400> SEQUENCE: 2
41 gaattcggat cctcatgcgc tagcggggat ggtgaggcag ctcagcagcg ccagcagga 59
43 <210> SEQ ID NO: 3
44 <211> LENGTH: 55
45 <212> TYPE: DNA
46 <213> ORGANISM: Hepatitis C virus
48 <400> SEQUENCE: 3
49 gaattcgcgg cgcgcatggc ccccatcacc gcctacagcc agcagacccc gggac 55
51 <210> SEQ ID NO: 4
52 <211> LENGTH: 55
53 <212> TYPE: DNA
54 <213> ORGANISM: Hepatitis C virus
56 <400> SEQUENCE: 4
57 gaattcggat cctcagggtga ccacctccag gtcagcggac atgcacgcca tgatg 55
59 <210> SEQ ID NO: 5
60 <211> LENGTH: 46
61 <212> TYPE: DNA
62 <213> ORGANISM: Hepatitis C virus
64 <400> SEQUENCE: 5
65 gaattcgcgg cgcgcatgtt ttggggcaag catatgtgga acttca 46

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/534,774

DATE: 05/20/2005
TIME: 13:31:46

Input Set : A:\seqlist.txt
Output Set: N:\CRF4\05202005\J534774.raw

```

67 <210> SEQ ID NO: 6
68 <211> LENGTH: 46
69 <212> TYPE: DNA
70 <213> ORGANISM: Hepatitis C virus
72 <400> SEQUENCE: 6
73 gaattcggat cctcagcaag gggtaggacca gtcctcggtt atccac          46
75 <210> SEQ ID NO: 7
76 <211> LENGTH: 49
77 <212> TYPE: DNA
78 <213> ORGANISM: Hepatitis C virus
80 <400> SEQUENCE: 7
81 gaattcgcgg ccgcgcgttc catgtcctac acctggaccg gcgccctga          49
83 <210> SEQ ID NO: 8
84 <211> LENGTH: 49
85 <212> TYPE: DNA
86 <213> ORGANISM: Hepatitis C virus
88 <400> SEQUENCE: 8
89 gaattcggat cctcagcggt tgggcagcag gtagatgccg actccgacg          49
91 <210> SEQ ID NO: 9
92 <211> LENGTH: 191
93 <212> TYPE: PRT
94 <213> ORGANISM: Hepatitis C virus
96 <400> SEQUENCE: 9
97 Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
98   1           5           10          15
99 Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gln Ile Val Gly
100    20          25          30
101 Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
102     35          40          45
103 Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
104     50          55          60
105 Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Ala Trp Ala Gln Pro Gly
106 65       70       75       80
107 Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
108     85          90          95
109 Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
110    100         105         110
111 Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
112     115         120         125
113 Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
114    130         135         140
115 Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
116 145       150       155       160
117 Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
118     165         170         175
119 Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala
120     180         185         190
123 <210> SEQ ID NO: 10
124 <211> LENGTH: 632

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/534,774

DATE: 05/20/2005
TIME: 13:31:46

Input Set : A:\seqlist.txt
Output Set: N:\CRF4\05202005\J534774.raw

```

125 <212> TYPE: PRT
126 <213> ORGANISM: Hepatitis C virus
128 <400> SEQUENCE: 10
129 Met Ala Pro Ile Thr Ala Tyr Ser Gln Gln Thr Arg Gly Leu Leu Gly
130 1 5 10 15
131 Cys Ile Ile Thr Ser Leu Thr Gly Arg Asp Lys Asn Gln Val Glu Gly
132 20 25 30
133 Glu Val Gln Val Val Ser Thr Ala Thr Gln Ser Phe Leu Ala Thr Cys
134 35 40 45
135 Ile Asn Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Ser Lys Thr
136 50 55 60
137 Leu Ala Gly Pro Lys Gly Pro Ile Thr Gln Met Tyr Thr Asn Val Asp
138 65 70 75 80
139 Gln Asp Leu Val Gly Trp Gln Ala Pro Pro Gly Ala Arg Ser Met Thr
140 85 90 95
141 Pro Cys Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala
142 100 105 110
143 Asp Val Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu
144 115 120 125
145 Ser Pro Arg Pro Val Ser Tyr Leu Lys Gly Ser Val Gly Gly Pro Leu
146 130 135 140
147 Leu Cys Pro Ser Gly His Val Val Gly Ile Phe Arg Ala Ala Val Cys
148 145 150 155 160
149 Thr Arg Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Met
150 165 170 175
151 Glu Thr Thr Met Arg Ser Pro Val Phe Thr Asp Asn Ser Ser Pro Pro
152 180 185 190
153 Ala Val Pro Gln Thr Phe Gln Val Ala His Leu His Ala Pro Thr Gly
154 195 200 205
155 Ser Gly Lys Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala Gln Gly Tyr
156 210 215 220
157 Lys Val Leu Val Leu Asn Pro Ser Val Ala Ala Thr Leu Gly Phe Gly
158 225 230 235 240
159 Ala Tyr Met Ser Lys Ala His Gly Ile Asp Pro Asn Ile Arg Thr Gly
160 245 250 255
161 Val Arg Thr Ile Thr Thr Gly Ala Pro Ile Thr Tyr Ser Thr Tyr Gly
162 260 265 270
163 Lys Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Ile Ile
164 275 280 285
165 Ile Cys Gln Glu Cys His Ser Thr Asp Ser Thr Thr Ile Leu Gly Ile
166 290 295 300
167 Gly Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val
168 305 310 315 320
169 Leu Ala Thr Ala Thr Pro Pro Gly Ser Val Thr Val Pro His Pro Asn
170 325 330 335
171 Ile Glu Glu Val Ala Leu Ser Asn Asn Gly Glu Ile Pro Phe Tyr Gly
172 340 345 350
173 Lys Ala Ile Pro Ile Glu Ala Ile Lys Gly Gly Arg His Leu Ile Phe
174 355 360 365

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/534,774

DATE: 05/20/2005
TIME: 13:31:46

Input Set : A:\seqlist.txt
Output Set: N:\CRF4\05202005\J534774.raw

175 Cys His Ser Lys Lys Cys Asp Glu Leu Ala Ala Lys Leu Ser Gly
 176 370 375 380
 177 Leu Gly Leu Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ser Val
 178 385 390 395 400
 179 Ile Pro Thr Ser Gly Asp Val Val Val Ala Thr Asp Ala Leu Met
 180 405 410 415
 181 Thr Gly Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr Cys
 182 420 425 430
 183 Val Thr Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile Glu
 184 435 440 445
 185 Thr Thr Val Pro Gln Asp Ala Val Ser Arg Ser Gln Arg Arg Gly
 186 450 455 460
 187 Arg Thr Gly Arg Gly Arg Ser Gly Ile Tyr Arg Phe Val Thr Pro Gly
 188 465 470 475 480
 189 Glu Arg Pro Ser Gly Met Phe Asp Ser Ser Val Leu Cys Glu Cys Tyr
 190 485 490 495
 191 Asp Ala Gly Cys Ala Trp Tyr Glu Leu Thr Pro Ala Glu Thr Ser Val
 192 500 505 510
 193 Arg Leu Arg Ala Tyr Leu Asn Thr Pro Gly Leu Pro Val Cys Gln Asp
 194 515 520 525
 195 His Leu Glu Phe Trp Glu Ser Val Phe Thr Gly Leu Thr His Ile Asp
 196 530 535 540
 197 Ala His Phe Leu Ser Gln Thr Lys Gln Ala Gly Asp Asn Phe Pro Tyr
 198 545 550 555 560
 199 Leu Val Ala Tyr Gln Ala Thr Val Cys Ala Arg Ala Gln Ala Pro Pro
 200 565 570 575
 201 Pro Ser Trp Asp Gln Met Trp Lys Cys Leu Ile Arg Leu Lys Pro Thr
 202 580 585 590
 203 Leu His Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Ala Val Gln Asn
 204 595 600 605
 205 Glu Val Thr Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys Met
 206 610 615 620
 207 Ser Ala Asp Leu Glu Val Val Thr
 208 625 630
 211 <210> SEQ ID NO: 11
 212 <211> LENGTH: 214
 213 <212> TYPE: PRT
 214 <213> ORGANISM: Hepatitis C virus
 216 <400> SEQUENCE: 11
 217 Met Phe Trp Ala Lys His Met Trp Asn Phe Ile Ser Gly Ile Gln Tyr
 218 1 5 10 15
 219 Leu Ala Gly Leu Ser Thr Leu Pro Gly Asn Pro Ala Ile Ala Ser Leu
 220 20 25 30
 221 Met Ala Phe Thr Ala Ser Ile Thr Ser Pro Leu Thr Thr Gln Asn Thr
 222 35 40 45
 223 Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Ala Ala Gln Leu Ala Pro
 224 50 55 60
 225 Pro Ser Ala Ala Ser Ala Phe Val Gly Ala Gly Ile Ala Gly Ala Ala
 226 65 70 75 80

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/534,774

DATE: 05/20/2005
TIME: 13:31:46

Input Set : A:\seqlist.txt
Output Set: N:\CRF4\05202005\J534774.raw

227 Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val Asp Ile Leu Ala Gly
 228 85 90 95
 229 Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala Phe Lys Val Met Ser
 230 100 105 110
 231 Gly Glu Val Pro Ser Thr Glu Asp Leu Val Asn Leu Leu Pro Ala Ile
 232 115 120 125
 233 Leu Ser Pro Gly Ala Leu Val Val Gly Val Val Cys Ala Ala Ile Leu
 234 130 135 140
 235 Arg Arg His Val Gly Pro Gly Glu Gly Ala Val Gln Trp Met Asn Arg
 236 145 150 155 160
 237 Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val Ser Pro Thr His Tyr
 238 165 170 175
 239 Val Pro Glu Ser Asp Ala Ala Arg Val Thr Gln Ile Leu Ser Ser
 240 180 185 190
 241 Leu Thr Ile Thr Gln Leu Leu Lys Arg Leu His Gln Trp Ile Asn Glu
 242 195 200 205
 243 Asp Cys Ser Thr Pro Cys
 244 210
 247 <210> SEQ ID NO: 12
 248 <211> LENGTH: 592
 249 <212> TYPE: PRT
 250 <213> ORGANISM: Hepatitis C virus
 252 <400> SEQUENCE: 12
 253 Met Ser Met Ser Tyr Thr Trp Thr Gly Ala Leu Ile Thr Pro Cys Ala
 254 1 5 10 15
 255 Ala Glu Glu Ser Lys Leu Pro Ile Asn Pro Leu Ser Asn Ser Leu Leu
 256 20 25 30
 257 Arg His His Asn Met Val Tyr Ala Thr Thr Ser Arg Ser Ala Ser Leu
 258 35 40 45
 259 Arg Gln Lys Lys Val Thr Phe Asp Arg Leu Gln Val Leu Asp Asp His
 260 50 55 60
 261 Tyr Arg Asp Val Leu Lys Glu Met Lys Ala Lys Ala Ser Thr Val Lys
 262 65 70 75 80
 263 Ala Lys Leu Leu Ser Ile Glu Glu Ala Cys Lys Leu Thr Pro Pro His
 264 85 90 95
 265 Ser Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val Arg Asn Leu
 266 100 105 110
 267 Ser Ser Arg Ala Val Asn His Ile Arg Ser Val Trp Glu Asp Leu Leu
 268 115 120 125
 269 Glu Asp Thr Glu Thr Pro Ile Asp Thr Thr Ile Met Ala Lys Ser Glu
 270 130 135 140
 271 Val Phe Cys Val Gln Pro Glu Lys Gly Arg Lys Pro Ala Arg Leu
 272 145 150 155 160
 273 Ile Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys Met Ala Leu
 274 165 170 175
 275 Tyr Asp Val Val Ser Thr Leu Pro Gln Ala Val Met Gly Ser Ser Tyr
 276 180 185 190
 277 Gly Phe Gln Tyr Ser Pro Lys Gln Arg Val Glu Phe Leu Val Asn Thr
 278 195 200 205

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/534,774

DATE: 05/20/2005

TIME: 13:31:47

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\05202005\J534774.raw

L:13 M:270 C: Current Application Number differs, Replaced Current Application Number